Spokane River Dissolved Oxygen TMDL
Advisory Group Meeting
June 22, 2004, 4-6 pm
Department of Ecology Building

Meeting Notes

Ken Merrill began the meeting with the introduction of Patrick Malone who served as the meeting facilitator. Patrick asked all in attendance to introduce themselves and complete the sign-in sheet. (The Department has the sign-sheet on file).

The following agenda was used for the meeting as previously distributed to all participants via email.

Agenda

4:00 – 4:05	Introductions
4:05 – 4:20	Review of Ecology's proposed TMDL approach
4:20 – 5:00	Discussion of differences with discharger's approach
5:00 – 5:10	Break
5:10 – 6:00	Next Steps and Timeline

Ken handed out copies of his slides (which were also emailed to all participants prior to the meeting) where he presented a summary of the Proposed Implementation Strategy (including the TMDL goal, current water quality impacts, WQ modeling conclusions, assumptions for WLA and LA to meet TMDL, a proposed two phase implementation strategy and schedule, a draft Spokane River proposed TMDL and point source loading reduction strategy, and a proposed draft timeline – with a goal of submitting the TMDL to EPA in December 2004).

Ken used a PowerPoint presentation to review each of his slides and the components of the Proposed Implementation Strategy. (The agenda was modified to eliminate the break as many participants had to leave by 6:00pm).

Questions and discussion on Ecology's proposed TMDL approach included (Attachment 1 from email):
For Phase 1:

- Does strategy allow interim allowable loading?
- Are figures based upon mass flows or average flows?
- How has dissolution been factored in (relationship between concentration and flow)?

- How will independent dischargers into Hangman Creek (e.g. Tekoa, Rockford, etc.) be treated?
- Will permits be set at the maximum river flow levels?

For Phase 2:

- What is the likely success of BMP's for the Phase 2 schedule?
- How have nonpoint source contributions been factored in?
- The dischargers ran a scenario leaving in nonpoint under two assumptions: (1) Increasing to AKART and (2) by removing all dischargers from river completely.
- What are the regulatory laws regarding BMP's (federal and state)?
- Can we completely remove nonpoint sources to achieve 10 ug/L by 2016?
- How likely/feasible is it to remove all nonpoint sources?
- Why not run a scenario eliminating point sources to see how much nonpoint we need to eliminate?
- Do we need to test SOD levels before accepting this implementation scenario?

Questions and discussion on differences with discharger's approach included (Attachment 2 from email):

- The discharger's paper is only a 'concept', not a proposal.
- There are apparent questions about definitions of AKART between DOE and the dischargers.
- The validity of Ken's chart given actual discharger performance was questioned.
- The feasibility and utility of constructing a new sanitary sewer treatment facility if no new or additional discharge will be allowed in the next 5 years.
- The value of finalizing the TMDL was questioned without doing/completing the Use Attainability Analysis (UAA). It was argued that the UAA must be finished before a permanent TMDL can or should be established.
- If you remove 100 cfs from the river aren't you putting it into the aquifer?
- How can/will Post Falls participation/actions be figured in?
- How much land would be needed for land application practices? Is such land realistically available?
- Algae bloom at Long Lake must be addressed now (discussion about best ways to remove algae bloom and best modeling followed).
- Questions about the legal interpretation of new sources and compliance schedules between federal and state law/regulations.
- Why spend $100 million for a new plant to discharge if existing dischargers must move out of the river? (Why can't new County facility use reuse technology)?

General questions and discussion included:

- Concern about assuming all scenarios use river discharge when we have wetlands available? Can't we explore non-discharge options?
- Fish and Wildlife representative was asked to explore non-discharge options using wetlands.

- Do we need a hydrologist to examine options for non-discharge and aquifer recharge (need better science)?
- County has a watershed-planning model that can assess non-discharge options.
- UAA concept may not meet legal requirements as presently proposed. UAA concept could slow TMDL and may be misguided. Non-pipe alternatives must be considered.
- Do we need to do the social and economic analysis of non-discharge scenarios/technologies (best practices mentioned were Minneapolis and San Antonio).
- Questions about UAA study assumptions (especially long-term demographic projections and future affluent scenarios).
- Dischargers need target discharge/loading levels as benchmarks for facility planning.
- How do we balance economic feasibility against alternative loading reduction scenarios?
- What is the status of the DOE planning process with EPA? Has EPA reviewed this implementation strategy? Has DOE management reviewed this proposed strategy?
- What next steps are relevant to adoption and ultimate rulemaking?

Questions and discussion on Ecology's proposed next steps and timeline included:

- How do we deal with the UAA?
- What are the implications of revising a TMDL at a later date once the UAA is complete?
- Ecology and the UAA offer slightly different assumptions and strategies.
- DOE can run similar scenarios to the UAA approach under similar assumptions.
- Discussion followed regarding the proposed timeline and public input sessions (meetings and hearings).
- The next meeting of the Advisory Group was set for July 27th from 4:00 to 6:00pm at Ecology. DOE will run new modeling using UAA numbers. Fish and Wildlife will report on land application opportunities. The meeting will continue current discussion and comments on both Ecology and UAA concepts.

Attachment 1 - Ken Merrill’s presentation slides

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Spokane R. TMDL to Protect Dissolved Oxygen (DO)
Proposed Implementation Strategy
(June-21-04)

TMDL Goal – Meet WA water quality criteria for DO at the end of 10-year compliance schedule with significant interim DO improvements

Portion Of Study Area	Classification	Dissolved Oxygen Criterion
Lake Spokane (from Lake Spokane Dam to Nine Mile Bridge)	Lake Class	No measurable decrease from natural conditions. (*> 0.2 mg/L DO is considered measurable*)
Spokane River (from Nine Mile Bridge to the Idaho border)	Class A	Dissolved oxygen shall exceed 8.0 mg/L. If "natural conditions" are less than the criteria, the natural conditions shall constitute the water quality criteria.

- **Current Water Quality Impacts**
- DO criteria in Lake Spokane and portions of the Spokane River are not met during the critical conditions.
- Lake Spokane suffers from algae blooms during the critical periods of warm weather and low flow. Along with contributing to oxygen demand, algae blooms also adversely affect aesthetics, boating, and other recreational uses of the Lake.
- Low DO conditions in the Lake contribute to violations of the Spokane Indian Tribe's water quality standards

WQ Modeling Conclusions

- Algal production causes DO depletions beyond criterion during critical conditions in the River and Lake
- Phosphorus has the most significant impact on algal production in the Lake and River, but DO is also impacted by BOD and ammonia
- Both point source and nonpoint sources of pollutant loading contribute to violations of WQ criterion (“nonpoint sources of pollutant” do not include natural background phosphorus loads from surface and groundwater sources)

WQ Modeling Conclusions (cont)

- Current nonpoint pollutant loading alone, contributes nutrients in excess of the level needed to meet DO criteria.
- Managing pollutant loads as proposed to protect Lake DO will also protect the river DO.
- Reducing BOD and phosphorus loads will reduce sediment oxygen demand over time allowing for improved DO in the hypolimnion of the lake.

Assumptions for WLA and LA to meet TMDL

- Sensitivity of the Lake to nutrient loading and existing nonpoint loads allow no assimilative capacity for point source phosphorus loading during critical conditions.
- There is no certainty that significant reduction of nutrient loading from nonpoint sources will occur. An adaptive management approach will likely be required with follow-up monitoring after large-scale watershed programs have become effective.
- Reduction in the Lake's sediment oxygen demand (SOD) from reduced algal productivity is likely, but it will require further water quality monitoring over several years to quantify the effect

Proposed Implementation Strategy

- **Phase 1 - Maximum Nutrient Reduction by 2009**

- **Phase 2 – Natural Background Phosphorus Loading by 2016**

Phase 1 - Maximum Nutrient Reduction by 2009

- Submit TMDL to EPA for approval in December 2004.
- Reduce interim point source phosphorus loading by > 90% no later than 2009 using state-of-science phosphorus removal (<50 ug/L effluent TP).
- Interim allowable point source loading for total phosphorus ***CAPPED*** at existing flows using state-of-science treatment.
- Significant reductions in CSO and Stormwater discharges completed

Phase 1 - Maximum Nutrient Reduction by 2009

(cont)

- Any new or expanded discharger must share from existing interim allowable phosphorus loading with a compliance schedule to eliminate the load or meet the natural background concentration by 2016.
- Dischargers of point source load must develop options for alternatives to river-disposal of wastewater effluent and begin implementation for any expansion in flow during the critical season and/or be capable of meeting natural background concentrations (10 ug/L TP).
- Nonpoint TMDLs must be completed for tributaries with detailed implementation plans and begin implementation of best management practices (BMPs

Phase 2 – Natural Background Phosphorus Loading by 2016

- Continue implementing nonpoint BMPs and monitoring - adapt plan based on monitoring results and/or new information.
- Complete development and implementation of seasonal alternatives to river disposal using reclaimed water reuse options and/or meet natural background concentrations for total phosphorus (10 ug/L TP). *Note – if discharge concentrations of total phosphorus meet natural background, there is no need to limit the loading because the discharge will not increase the in-stream concentration regardless of discharge volume*

Phase 2 – Natural Background Phosphorus Loading by 2016 (cont)

- Perform Lake monitoring to confirm DO response to reduced nutrients and SOD reductions.
- If necessary, complete UAA and modify criteria / TMDL where appropriate.
- If monitoring and new information confirms that decreases in nonpoint loads will result in a DO depletion of less than 0.2 mg/L DO, then adjustment to the point source WLA may be made

DRAFT - Spokane River Proposed TMDL and Point Source Loading Reduction Strategy - DRAFT

YR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TMDL Schedule w/ existing WQ criteria	TMDL Approval	**Phase I - Interim Nutient Removal**				**Phase 2 - Final TMDL Goal - Meet D.O. Criteria** 0.2 mg/L DO decrease from natural condition by primarily phosphorus control						
Point Sources	Planning for Max TP removal and reuse		Construction		MAX TP removal in-place	Meet natural background conc or Imp Reuse - Lake Monitor - Complete UAA						
Nonpoint Sources	Tributary TMDLs completed with Imp Plan			Begin Implement BMPs		Complete implement BMPs w/ monitoring and adaptive approach						

Point Source Phosphorus Loading Reduction

	Existing Avg TP load Summer 2003			Max TP removal Load @ 50 ug/L-all to river			Load at TP Final goal @ 10 ugL to River	
Discharger	**#/day**	**Flow MGD**		**#/day**	**Flow MGD**		**#/day**	**Flow MGD**
CDA	23.6	3.2		1.3	3.2		0.3	3.2
Hayden	??	??		??	??		??	??
Post Falls	9.9	2.1		0.9	2.1		0.2	2.1
Liberty Lake	18.9	0.7		0.3	0.7	If effluent TP meets natural background	0.1	0.7
Kaiser	0.2	0.1		0.0	0.1	concentration - then no need to limit TP loading	0.0	0.1
IEP	17.0	4.8*		1.2	2.8		0.2	2.8
City- Spokane	159.4	36.5		11.1	26.5		2.2	26.5
Spokane Co.	NA	NA		4.2	10.0		0.8	10.0
NPS Pollutant	NA	NA		NA	NA		??	??
Tot. PS Load	**229.0**			**18.9**			**3.8**	

* Includes 2 mgd noncontact cooling water from groundwater excluded from future calculations

Pt Src compliance schedule implemented via common Administrative Order then rolled into all individual permits within 2 years

Draft Timeline - Submittal to EPA December 2004

July/August-04 Refine TMDL proposal

August-04 Draft TMDL and SIS

Oct-04 Public Workshop and 30 day comment period

Nov-04 Respond to Comments and revise TMDL

December-04 Submit to EPA